

WHAT IS CLAIMED IS:

1. An image process method comprising:
  - an input step of inputting color image data composed of a signal representing brightness and a signal representing tint; and
    - a smoothing process step of performing a smoothing process to the signal representing tint, while holding the signal representing brightness.
- 10 2. A method according to Claim 1, wherein said input step further comprises a conversion step of converting the color image data composed of plural color component signals into the signal representing brightness and the signal representing tint.
- 15 3. A method according to Claim 1, further comprising:
  - a judgment step of judging whether or not the color image data including the signal representing brightness represents an edge part, on the basis of the signal representing brightness; and
    - a step of not performing the smoothing process, if it is judged that the color image data represents the edge part.
- 25 4. A method according to Claim 3, wherein, if it is judged that the color image data represents the edge

part, an emphasis process is performed to the signal representing brightness.

- 5        5. A method according to Claim 1, further comprising:
  - a judgment step of judging whether or not the color image data including the signal representing tint represents a tint change part, on the basis of the signal representing tint; and
  - 10        a step of not performing the smoothing process, if it is judged that the color image data represents the tint change part.
- 15        6. A method according to Claim 1, further comprising:
  - a judgment step of judging whether or not the color image data represents a highlight part; and
  - 20        a step of not performing the smoothing process, if it is judged that the color image data represents the highlight part.
- 25        7. A method according to Claim 1, wherein the smoothing process is the process which is performed by using a filter symmetrical with respect to a notable pixel in upper and lower directions and right and left directions.

8. A method according to Claim 1, wherein the  
smoothing process is the filtering process which uses  
peripheral pixels of the input color image data being  
the notable pixel, and the color image data subjected  
5 to the smoothing process is used in a smoothing process  
for other color image data.

9. A method according to Claim 8, wherein the  
smoothing process is the process which uses a filter  
10 having high weight for a pixel area subjected to the  
smoothing process prior to the notable pixel, and the  
data is digitally processed.

10. An image process method comprising:  
15 an input step of inputting a drawing instruction  
indicating an output color image;  
a detection step of detecting an image data part  
on the basis of the drawing instruction; and  
a color noise reduction process step of performing  
20 a color noise reduction process to the image data part.

11. A method according to Claim 10, wherein the  
color image data is composed of a signal representing  
brightness and a signal representing tint, and the  
25 noise reduction process is a smoothing process which is  
performed to the signal representing tint while holding  
the signal representing brightness.

12. A method according to Claim 10, wherein, if a graphic image data part is detected on the basis of the drawing instruction, the color noise reduction process is not performed.

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13. An image process method which performs a filtering process to color image data, comprising:

10 a detection step of detecting a scene change part in accordance with the color image data and peripheral color image data; and

a filter size change step of changing a filter size in accordance with the detected result.

15 14. A method according to Claim 13, wherein a filter used in the filtering process is a filter for referring to a notable line including a notable pixel and lines before the notable line.

20 15. A method according to Claim 13, further comprising:

a drawing instruction group input step of inputting a group of drawing instructions indicating an output image;

25 an image data generation step of generating output image data representing the output image, on the basis of the group of the drawing instructions;

a division step of dividing the same image on the

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basis of the plural drawing instructions; and  
a division image input step of inputting the  
divided plural images.

5        16. An image process apparatus comprising:  
            input means for inputting color image data  
            composed of a signal representing brightness and a  
            signal representing tint;  
            smoothing process means for performing a smoothing  
10        process to the signal representing tint, while holding  
            the signal representing brightness; and  
            image formation means for forming an image on the  
            basis of the signal representing brightness and the  
            signal representing tint subjected to the smoothing  
15        process.

5        17. An image process apparatus comprising:  
            input means for inputting a drawing instruction  
            indicating an output color image;  
20        detection means for detecting an image data part  
            on the basis of the drawing instruction;  
            color noise reduction process means for performing  
            a color noise reduction process to the image data part;  
            and  
25        image formation means.

5        18. An image process apparatus which performs a

filtering process to color image data, comprising:

detection means for detecting a scene change part in accordance with the color image data and peripheral color image data;

5 filter size change means for changing a filter size in accordance with the detected result; and image formation means.

19. A computer-readable recording medium which  
10 records a program to cause a computer to execute:

an input procedure for inputting color image data composed of a signal representing brightness and a signal representing tint; and

15 a smoothing process procedure for performing a smoothing process to the signal representing tint, while holding the signal representing brightness.

20. A computer-readable recording medium which records a program to cause a computer to execute:

20 an input procedure for inputting a drawing instruction indicating an output color image;

a detection procedure for detecting an image data part on the basis of the drawing instruction; and

25 a color noise reduction process procedure for performing a color noise reduction process to the image data part.

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21. A computer-readable recording medium which records a program to cause a computer to execute, in an image process method for performing a filtering process to color image data:

5           a detection procedure for detecting a scene change part in accordance with the color image data and peripheral color image data; and

              a filter size change procedure for changing a filter size in accordance with the detected result.

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22. An image process method comprising:

              a calculation step of calculating a feature quantity of an input image;

15           a color noise reduction process step of performing a color noise reduction process to input image data; and

              an image correction step of performing a correction process to the input image subjected to the color noise reduction process, on the basis of the calculated feature quantity.

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23. A method according to Claim 22, wherein the input image data includes a component representing brightness and a component representing tint, and

25           in said color noise reduction process step, a smoothing process is performed to the component representing tint.

24. A method according to Claim 22, further comprising an enlargement process step of performing an enlargement process to the corrected input image.

5        25. A method according to Claim 22, further comprising a scaling step of scaling an image size, and wherein the order of said scaling step and said color noise reduction process step is controlled in accordance with a scaling rate.

10      26. A method according to Claim 22, further comprising a reduction step of reducing an image size, and wherein the order of said reduction step and said color noise reduction process step is controlled in accordance with a reduction method.

15      27. A method according to Claim 22, wherein, in said image correction step, brightness of the input image is corrected.

20      28. A method according to Claim 22, wherein, in said image correction step, saturation of the input image is corrected.

25      29. A method according to Claim 23, wherein, in said image correction step, the component representing

brightness and the component representing tint are corrected.

30. A method according to Claim 22, wherein, in  
5 said calculation step, the feature quantity is calculated on the basis of the input image subjected to the color noise reduction process.

31. A method according to Claim 22, wherein the  
10 color noise reduction process is performed on the basis of a user's manual instruction.

32. An image process method comprising:  
a color noise reduction process step of performing  
15 a color noise reduction process for input digital image data; and  
a scaling step of scaling an image size,  
wherein the order of said color noise reduction process step and said scaling step is controlled in  
20 accordance with a scaling rate or a scaling method.

33. An image process apparatus comprising:  
calculation means for calculating a feature quantity of an input image;  
25 color noise reduction process means for performing a color noise reduction process for input image data;  
and

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image correction means for performing a correction process to the input image subjected to the color noise reduction process, on the basis of the calculated feature quantity.

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34. An apparatus according to Claim 33, further comprising image formation means for forming an image on the basis of the image data subjected to the correction process.

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35. A recording medium which records a computer-readable program to realize an image process apparatus comprising:

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a calculation step of calculating a feature quantity of an input image;

a color noise reduction process step of performing a color noise reduction process for input image data; and

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an image correction step of performing a correction process to the input image subjected to the color noise reduction process, on the basis of the calculated feature quantity.